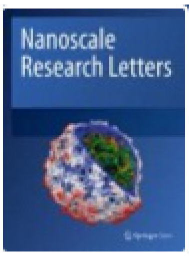

Nanoscale Research Letters

2018, Volume 12, Issue 1, pag. 486

Targeting Endothelial Cells with Multifunctional GaN/Fe Nanoparticles

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https://doi.org/10.1186/s11671-017-2262-y

Abstract

In this paper, we report on the interaction of multifunctional nanoparticles with living endothelial cells. The nanoparticles were synthesized using direct growth of gallium nitride on zinc oxide nanoparticles alloyed with iron oxide followed by core decomposition in hydrogen flow at high temperature. Using transmission electron microscopy, we demonstrate that porcine aortic endothelial cells take up GaN-based nanoparticles suspended in the growth medium. The nanoparticles are deposited in vesicles and the endothelial cells show no sign of cellular damage. Intracellular inert nanoparticles are used as guiding elements for controlled transportation or designed spatial distribution of cells in external magnetic fields.

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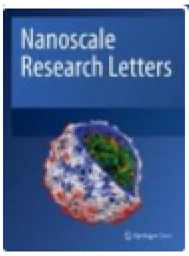

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